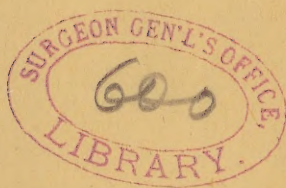


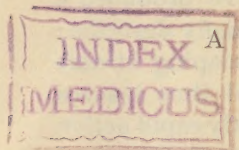
Pyncheon (Ed.)

A new nebulizing device





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A NEW NEBULIZING DEVICE.

BY EDWIN PYNCHON, M. D.,

CHICAGO, ILL.

PROFESSOR OF RHINO-LARYNGOLOGY AND OTOTOLOGY, CHICAGO EYE,
EAR, NOSE AND THROAT COLLEGE; PROFESSOR OF DISEASES OF
THE NOSE AND THROAT, JENNER MEDICAL COLLEGE.

In the use of inhalents, as a therapeutic measure in the treatment of nasal and lung troubles, the trend of present-day practice is toward the employment of nebulous vapors. By nebulization the remedy employed is at once dissipated in the passing stream of air, producing a veritable smoke, which, owing to its physical properties, penetrates further and, when inhaled under pressure, can be made to enter the finer ramifications of the air tubes of the lungs.

For the production of nebulæ there have been several devices offered for sale, and a few of them even patented. Of course, it will be understood the more claimed through the patent the higher the price. Certain advantages can be justly claimed for a multi-nebulizing apparatus, wherein several different remedies are in circuit, which can be combined at the will of the operator, not the least of which is that it is an imposing office fixture which may soon pay for itself through its psychical effect upon the susceptible patient. The advantage of being able to combine two or more remedies from different bottles, while being a great convenience, is somewhat overestimated and, as an offset, there may at times remain in the carrying tubes an objectionable amount of some previously used remedy. Furthermore, the numerous joints and connections required greatly increase the chances for leaks.

On the other hand, there are several advantages in having separate bottles, as, for example, portability and greater simplicity, which insures less trouble in cleaning and refilling. Another advantage of no slight importance, which may be mentioned, is relative cheapness. At my

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suggestion Messrs. Truax, Greene & Co. have produced a nebulizer of this latter class, which I will briefly describe: The outlet hole is of sufficient size so the escaping stream

of nebulous vapor is liberal in volume, and thus insures sufficiently rapid action for either Politizerization or alveolar expansion. While the bottle is provided with a broadened base, to prevent

its being easily upset, the diameter of the body is small enough to permit of its being readily held with the cut-off in one hand, and thus leave the other hand disengaged. The metal-rimmed hard rubber cap screws upon the glass body, the thread being coarse, and the screw long enough so that to tighten it a full turn and a half is required. This permits of the use of a solid leather washer, and insures a tight joint and freedom from that constant leak and oozing which has

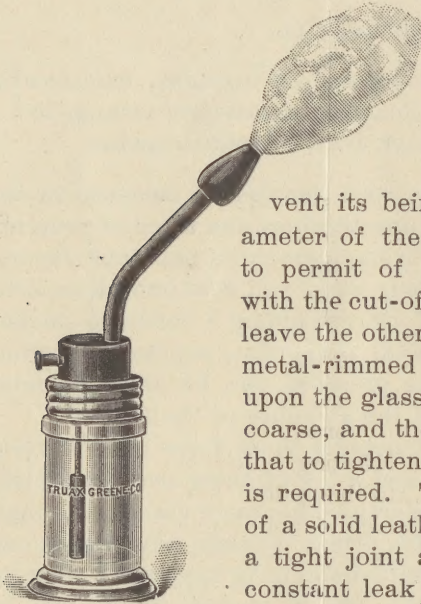


Fig. 1. Nebulizer, with
Nose-piece ($\frac{1}{3}$ size)

heretofore been so annoying in devices of this class. As the remedy being nebulized, comes in contact with only glass or hard rubber, there is no objection to the use of iodine, or any other agent which would be corrosive to metal. While this nebulizer may be used with a compression hand bulb the best results will be obtained when used with a compressed air apparatus, giving from a 20 to a 50-pound pressure, or more. The heavier the pressure, the more dense the nebula produced. With the nose piece (as shown in figure 1,) the nebulizer serves as a nasal inhaler, or as a device with which Politzerization can be accomplished. For lung inhalation the nose piece can be removed and the round tube held between the lips, which, when tightly compressed about the tube, form a safety-valve when practicing forced dilatation, as recommended

by Dr. George F. Hawley.* I have found patients to differ



Fig. 2. Mouth-piece (2/5 size) greatly as to their ability in this direction and to meet this difficulty have designed a mouth-piece which has proven to be much more agreeable and efficient in use, and still in no way impairs the desired "safety-valve" action.

Figure 3 illustrates an extension tip of smaller caliber, which causes the escaping stream of nebula to be diminished in size, and consequently increased in force. This tip can be revolved at will so as to point downward for the larynx, upward for the post-nasal space, or to either side for the tonsils, and if thus used in lacunar tonsillitis will assist in dislodging the lacunar masses.



Fig. 3. Extension Tip (1/3 size).

With this tip pointed sidewise, and slightly lengthened with a short piece of soft rubber tubing, the device can be conveniently used when inflating with the Eustachian catheter, and thus force into the middle ear either a continuous or intermitting stream of nebulous vapor from the appropriate remedy, with a suitably regulated air pressure.

This nebulizer can be additionally used in several ways, as follows:

1. With a 20-pound pressure as an inhaler to medicate the nose, throat and larger lung tubes by introducing nose tip in one nostril and closing the other. Next operate cut-off and have patient inhale until the lungs are full, when discontinue air pressure. Exhale through nose and repeat, alternating from one side to the other. The deeper the inhalations the more pronounced the effects. By inhaling in this way no middle ear inflation will be produced.

2. If used in the same way, with intermitting pressure, after the free use of a suitably medicated lavoline spray, the oily fluid will be forced to the deeper nasal recesses, and may thus be of increased value during coryzic congestion, or when the accessory sinuses are affected.

*Jour. Am. Med. Ass'n, May 12, 1894, p. 702.

3. To medicate only the fauces and nose, remove the nasal tip and, after filling the lungs with air, introduce tube between lips; next, operate cut-off, and at the same time direct patient to exhale through the nose.

4. To medicate the nose only, introduce nasal tip in one nostril, leaving the opposite nostril free; next, have patient open mouth and close soft palate against pharynx by breathing through mouth; then operate cut-off, when the nebula will pass through the nose in a continuous stream, as does a nasal douche. After a little, change tip to the other nostril, thereby reversing the direction of the nebula.

5. With many patients when thus used, with from a 20 to a 50-pound pressure, if the free nostril be quickly closed for a second, repeating several times in a minute, the ears will as often be inflated.

6. To give a pronounced Politzerization introduce nose-tip in one nostril, closing the other, and direct the patient to cough hard or hawk, simultaneously operating the cut-off. Either ear can be inflated at will by tightly closing the external opening of the other ear, otherwise both ears will be inflated, though with some patients as much as a 50-pound pressure may be required.

7. If, prior to this method of use, the nasal passages be freely sprayed with a bland oily spray, as a 3 per cent. solution of camphor-menthol in fluid lavoline, some of the oily fluid will be forced through the Eustachian tubes to the middle ear and prove beneficial, if done at proper intervals, in chronic non-suppurative middle ear troubles. Of course no aqueous spray must have been previously used.

8. Another method of causing inflations is as follows: After exhalation introduce nasal tip in one nostril, closing the other; then direct patient to press tongue firmly against the roof of the mouth, well back, and make an effort to swallow each time the cut-off is operated, which should be done every two seconds until the lungs are filled, and successive inflations will thus be produced.

9. As an inhaler, to cause forced dilatation or alveolar expansion, after a full exhalation place mouth-piece between teeth, closing lips tightly and also the nose, then operate cut-off, directing patient to inhale as much as possible. A 50-pound pressure should be used and the stream of nebula continued until the lungs become so fully impacted that the nebula escapes explosively from the lips. In this way all the practical advantages of the pneumatic cabinet can be readily obtained and even more.

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